

IN THE CLAIMS:

Please amend claims 170, 172, 178, and 183, and add new claim 188 as follows:

1-169. (Cancelled)

170. (Currently Amended) ~~An electrically controlled birefringence (ECB)-type~~ A liquid crystal display device, comprising:

a first substrate and a second substrate for sandwiching a liquid crystal having a negative dielectric constant anisotropy, and ~~orientations~~ molecules of the liquid crystal ~~being aligning in a direction~~ vertical to the first and second substrates when no voltage is applied,

said first substrate including first domain regulating means for regulating azimuths of ~~the orientations of~~ said liquid crystal molecules when a voltage is applied to said liquid crystal, said azimuths of orientations being defined as alignments of respective ones of said molecules in a horizontal plane generally parallel to planes of the first and second substrates, and

said second substrate including second domain regulating means for also regulating said azimuths of the orientations of said liquid crystal molecules when a voltage is applied to said liquid crystal,

wherein when vertically seen to the substrates, said first domain regulating means includes first line portions and second line portions, said first line portions being

extended in a first direction, said second line portions being extended in a second direction different from said first direction, said second domain regulating means includes third line portions and fourth line portions, said third line portions being extended in said first direction, said fourth line portions being extended in said second direction, said first and third line portions being arranged to be neighbored and to be approximately parallel to each other, and said second and fourth line portions being arranged to be neighbored and to be approximately parallel to each other, and

wherein ~~the device is a non-scattering type~~ said azimuths of the orientations are regulated according to respective directions of said line portions.

171. (Previously Presented) A liquid crystal display device according to claim 170, said first and second domain regulating means includes protrusions, depressions, slits, or combinations thereof.

172. (Currently Amended) A liquid crystal display device according to claim 171, wherein at least four kinds of domains, in which said azimuths of the orientations of said liquid crystal are substantially different, are formed when a voltage is applied to said liquid crystal.

173. (Previously Presented) A liquid crystal display device according to claim 172, wherein a difference angle between said first and second directions is about 90 degrees.

174. (Previously Presented) A liquid crystal display device according to claim 172, wherein said first and second directions differ from edges of pixel electrodes by about 45 degrees.

175. (Previously Presented) A liquid crystal display device according to claim 170, wherein said line portions of said first and second domain regulating means are repeatedly arranged with a predetermined pitch respectively on said first and second substrates.

176. (Previously Presented) A liquid crystal display device according to claim 170, wherein said line portions of said first and second domain regulating means are bent in a generally zigzag shape.

177. (Previously Presented) A liquid crystal display device according to claim 175, wherein said first and second domain regulating means are offset by half of said predetermined pitch.

178. (Currently Amended) ~~An electrically controlled birefringence (ECB) type~~ A liquid crystal display device, comprising:

a first substrate and a second substrate for sandwiching a liquid crystal having a negative dielectric constant anisotropy, and ~~orientations~~ molecules of the liquid

crystal ~~being aligning in a direction~~ vertical to the first and second substrates when no voltage is applied,

said first substrate including first domain regulating means for regulating azimuths of the orientations of said liquid crystal when a voltage is applied to said liquid crystal, said azimuths of orientations being defined as alignments of respective ones of said molecules in a horizontal plane generally parallel to planes of the first and second substrates, and

said second substrate including second domain regulating means for also regulating said azimuths of the orientations of said liquid crystal when a voltage is applied to said liquid crystal,

wherein when vertically seen to the substrates, said first domain regulating means includes first line portions and second line portions, said first line portions being extended in a first direction, said second line portions being extended in a second direction different from said first direction, said second domain regulating means includes third line portions and fourth line portions, said third line portions being extended in said first directions, said fourth line portions being extended in said second direction, said first and third line portions being arranged to be neighbored and to be approximately parallel to each other, said second and fourth line portions being arranged to be neighbored and to be approximately parallel to each other, and all of said first, second, third, and fourth line portions existing within each of a plurality of pixels, and

wherein ~~the device is a non-scattering type~~ said azimuths of the orientations are regulated according to respective directions of said line portions.

179. (Previously Presented) A liquid crystal display device according to claim 178, wherein said line portions of said first and second domain regulating means are arranged with a predetermined pitch respectively on said first and second substrates.

180. (Previously Presented) A liquid crystal display device according to claim 179, wherein said predetermined pitch is an integral submultiple of said arranged pitch of said pixels.

181. (Previously Presented) A liquid crystal display device according to claim 179, wherein said line portions of said first and second domain regulating means are bent in a generally zigzag shape.

182. (Previously Presented) A liquid crystal display device according to claim 179, wherein said line portions of said first and second domain regulating means are offset by half of said predetermined pitch.

183. (Currently Amended) ~~A~~ ~~An electrically controlled birefringence (ECB) type~~ liquid crystal display device, comprising:

a first substrate and a second substrate for sandwiching a liquid crystal having a negative dielectric constant anisotropy, and ~~orientations~~ molecules of the liquid crystal ~~being aligning in a direction~~ vertical to the first and second substrates when no voltage is applied,

said first substrate including first domain regulating means for regulating azimuths of the orientations of said liquid crystal when a voltage is applied to said liquid crystal, said azimuths of orientations being defined as alignments of respective ones of said molecules in a horizontal plane generally parallel to planes of the first and second substrates, and

said second substrate including second domain regulating means for also regulating said azimuths of the orientations of said liquid crystal when a voltage is applied to said liquid crystal,

wherein, when vertically seen to the substrates, said first domain regulating means includes first line portions being extended in a first direction, said second domain regulating means includes second line portions being extended in a second direction, said first line portions being arranged to be approximately parallel to each other at a predetermined pitch and second line portions being arranged to be approximately parallel to each other at said predetermined pitch, and said first and second line portions being crossed, and

wherein ~~the device is a non-scattering type~~ said azimuths of the orientations are regulated according to respective directions of said line portions.

184. (Previously Presented) A liquid crystal display device according to claim 183, wherein when vertically seen to the substrates, said first domain regulating means further includes third line portions being extended in said second direction, said second domain regulating means further includes fourth line portions being extended in

said first direction, said third portions being arranged to be approximately parallel to each other, said fourth line portions being arranged to be approximately parallel to each other, and said third and fourth line portions being crossed.

185. (Previously Presented) A liquid crystal display device according to claim 184, wherein when vertically seen to the substrates, said first, second, third, and fourth line portions respectively being extended continuously, said first and third line portions being crossed to form quadrangles, said second and fourth line portions being crossed to form quadrangles, and said quadrangles formed by said first and third line portions and said second and fourth line portions being offset.

186. (Previously Presented) A liquid crystal display device according to claim 185, wherein when vertically seen to the substrates, said arrangement offset of said quadrangles is a half of said predetermined pitch.

187. (Previously Presented) A liquid crystal display device according to claim 185, wherein when vertically seen to the substrates, said first direction and said second direction cross at right angles.

188. (New) A liquid crystal display device, comprising:  
a first substrate having an inner surface and an outer surface;  
a first electrode on the inner surface of the first substrate;

a first protrusion on the inner surface of the first substrate,  
wherein the first protrusion is shaped as a bent line in plane view;  
a second substrate opposite the first substrate and having an inner surface  
and an outer surface;  
a second electrode having boundaries on the inner surface of the second  
substrate in plane view; and  
a second protrusion on the inner surface of the second substrate,  
wherein the second protrusion is shaped as a bent line in plane view,  
whereby the first protrusion and the second protrusion have saw shapes in  
plane view, and  
wherein the first protrusion and the second protrusion are arranged  
alternatively in plane view.